

# MATH 7001 ADVANCED MATHEMATICAL INVESTIGATIONS

**Credit Points** 20

**Legacy Code** 301176

**Coordinator** Paul Hurley ([https://directory.westernsydney.edu.au/search/name/Paul Hurley/](https://directory.westernsydney.edu.au/search/name/Paul%20Hurley/))

**Description** Advanced Mathematical Investigations is an integral part of the Master of Research for students planning a future in mathematical and/or statistical research. Students will carry out extensive investigations under the supervision of an academic staff member that will allow the development of skills, knowledge and a way of thinking that will assist in the learning of mathematics and/or statistics needed for research in their chosen field of mathematics. They will also develop their written and oral communication skills, culminating in a paper which will be written as though it is to be submitted to a mathematics/statistics journal for publication (including following the journal's requirements for presentation) and an oral presentation of the style expected at a mathematics/statistics conference.

**School** Computer, Data & Math Sciences

**Discipline** Mathematics

**Student Contribution Band** HECS Band 1 20cp

**Level** Postgraduate Coursework Level 7 subject

**Restrictions**

Students must be enrolled in 8086 Master of Research.

**Assumed Knowledge**

Undergraduate level of knowledge in mathematics or statistics.

## Learning Outcomes

On successful completion of this subject, students should be able to:

1. Plan and develop an investigative project.
2. Locate, identify and use information relevant to the problem being studied.
3. Write an extensive literature review.
4. Undertake self-directed study relevant to the problem being investigated.
5. Undertake a theoretical and/or analytical investigation.
6. Write and produce a comprehensive research report in a logical, concise and professional manner.
7. Present a project and its results to an audience in a talk.
8. Prepare results of research for submission to a mathematics or statistics journal for publication.

## Subject Content

How to write in a professional manner in mathematics.  
Employing LaTeX to write reports/papers and give presentations in mathematics.  
Expert knowledge on history/background of chosen field of mathematical research.

Current areas of interest/study and/or open problems in chosen field of mathematical research.

How to write and submit work for publication to a journal in mathematics or statistics.

## Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/Group Task
Report	25 hours	25	N	Individual
Presentation	15 minutes	20	N	Individual
Report	25 hours	25	N	Individual
Presentation	15 minutes	20	N	Individual
Viva Voce	10 minutes	10	N	Individual

Teaching Periods

### Autumn (2022)

**Parramatta - Victoria Rd**

**Day**

**Subject Contact** Paul Hurley ([https://directory.westernsydney.edu.au/search/name/Paul Hurley/](https://directory.westernsydney.edu.au/search/name/Paul%20Hurley/))

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=MATH7001\\_22-AUT\\_PS\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=MATH7001_22-AUT_PS_D#subjects))

### Autumn (2023)

**Parramatta - Victoria Rd**

**On-site**

**Subject Contact** Paul Hurley ([https://directory.westernsydney.edu.au/search/name/Paul Hurley/](https://directory.westernsydney.edu.au/search/name/Paul%20Hurley/))

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